## Message

From: Dan Pope [DPope@css-inc.com]

**Sent**: 6/21/2017 9:02:12 PM

To: Davis, Eva [Davis.Eva@epa.gov]; d'Almeida, Carolyn K. [dAlmeida.Carolyn@epa.gov]; Wayne Miller

[Miller.Wayne@azdeq.gov]; Jennings, Eleanor [Eleanor.Jennings@parsons.com]; Cosler, Doug

[Doug.Cosler@TechLawInc.com]; Brasaemle, Karla [Karla.Brasaemle@TechLawInc.com]; Bo [bo@praxis-enviro.com]

Subject: This statement appears to be contradictory to the implication that LNAPL accumulations......

What is the basis for saying that '<1 ft/week' is "ideal" and '<5 ft/week' is "non-inhibiting" and EBR should proceed? In the second yellow box of the Decision Tree, it states, "LNAPL removal is generally more efficient than EBR. LNAPL not removed can increase EBR timeframe." This statement appears to be contradictory with the implication that LNAPL accumulations of up to 1 ft/week in an injection well are acceptable for proceeding with EBR. Several of the planned injection wells, including CZ11, UWBZ10, UWBZ33, UWBZ16, W11, W37, LSZ50, LSZ48, and LSZ49, have recently and continuously contained LNAPL under non-pumping conditions, and thus are not likely to be useable as injection wells in the immediate future.

So if there is any LNAPL in a well (more than 2", or what — even just a sheen?) they should not use that well for injections or extractions? How long should they wait after finding LNAPL in a well (a month, a quarter, etc.) to see if any more LNAPL is found (after removing the LNAPL), before they can use that well? Or maybe they just shouldn't use that well at all, at any time? Or should they just recover the existing LNAPL in the well, and then use it? I'm much in favor of recovering LNAPL, of course. Maybe we're just saying that since they can't seem to measure/recover LNAPL with pumps in place in the well, then they can't use LNAPL-containing wells for injection/extraction at all, because recovering (and monitoring!) LNAPL is more important/effective than EBR?

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11. The first yellow box states that if temperatures are changing rapidly at extraction or injection locations, potentially temperature should be monitored and wait for stabilization [wu3]. This appears to be contradictory to the AF's objections that continuous groundwater extraction for containment would have a negative effect on EBR because such extraction would adversely affect the temperatures that are currently advantageous to EBR, and would pull dissolved oxygen into the system, and thereby alter the redox conditions. [wu4] The May 2014 Final RD/RAWP that was approved stated "The approach to remediating the LNAPL-impacted zone outside the TTZ combines the technologies of groundwater....

Actually, your comment states it pretty clearly, I think... "The point I am trying to make is that **if it's okay to** pump/monitor for stabilizing the temperature, why can't they pump for containment? Pumping to stabilize the temp would provide containment (to an extent). Can you word it better?"

From: Davis, Eva [mailto:Davis.Eva@epa.gov] Sent: Wednesday, June 21, 2017 12:33 PM

To: Dan Pope; d'Almeida, Carolyn K.; Wayne Miller; Jennings, Eleanor; Cosler, Doug; Brasaemle, Karla; Bo

Cc: Henning, Loren

Subject: RE: here is clean copy of ST12 decision tree letter to work from

I've responded to a couple of your comments -

From: Dan Pope [mailto:DPope@css-inc.com]
Sent: Wednesday, June 21, 2017 12:12 PM

**To:** d'Almeida, Carolyn K. <<u>dAlmeida.Carolyn@epa.gov</u>>; Wayne Miller <<u>Miller.Wayne@azdeq.gov</u>>; Jennings, Eleanor <<u>Eleanor.Jennings@parsons.com</u>>; Davis, Eva <<u>Davis.Eva@epa.gov</u>>; Cosler, Doug <<u>Doug.Cosler@TechLawInc.com</u>>;

Brasaemle, Karla < Karla. Brasaemle@TechLawlnc.com>; Bo < bo@praxis-enviro.com>

Cc: Henning, Loren < Henning.Loren@epa.gov>

Subject: RE: here is clean copy of ST12 decision tree letter to work from

My comments.

From: d'Almeida, Carolyn K. [mailto:dAlmeida.Carolyn@epa.gov]

Sent: Wednesday, June 21, 2017 10:41 AM

To: Wayne Miller; Jennings, Eleanor; Davis, Eva; Dan Pope; Cosler, Doug; Brasaemle, Karla; Bo

Cc: Henning, Loren

**Subject:** here is clean copy of ST12 decision tree letter to work from

That last comment from Eleanor was fixed in this version

Carolyn d'Almeida Remedial Project Manager Federal Facilites Branch (SFD 8-1) US EPA Region 9 (415) 972-3150

"Because a waste is a terrible thing to mind..."